

EMB190 Alerting Issues – Lateral track or vertical path deviation beyond limits

1. Initiating Condition: In RNP approach and similar Next-Gen terminal area operations, the aircraft's failure to follow the centerline of the lateral track and/or vertical path within the required deviation limits (e.g., RNP value for lateral track), due to excess wind, autopilot failure, failure to engage autopilot/mode, or specific FMS/autopilot inability to meet specs

Type	Alert or cue	Threshold for alert or cue to be presented	Confusion regarding alert or cue	Other issues with regard to alert or cue	When alert is inhibited/suppressed or when cue is masked	How alert or cue is terminated
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Visual Alerts	None					
Aural Alerts	None					
Tactile Alerts	None					
Visual Cues	On the FMS Progress Page 3, the crosstrack error value on exceeds RNP value	RNP limit for the aircraft, crew, and specific approach		This cue requires effortful scanning (including obtaining the proper FMS page and incorporating that display into the instrument scan, which is unusual); and interpretation		
	On the PFD, the course deviation indicator is at full scale deflection	Full scale deflection equals the RNP limit				
	On the MFD map display, the lateral path deviation value is displayed (in tenths of NM, with "L" or "R") immediately below the airplane symbol		This value requires scanning, interpretation, and comparison with the appropriate track deviation limit			

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Visual Cues	On the MFD map display, the aircraft symbol deviates from the magenta line (lateral deviation)		Detecting lateral track deviation from the aircraft symbol/magenta line display is ambiguous because display of the deviation depends on the range setting on the EHSI/ND display.			
Aural Cues	None					
Tactile/Somatic Cues	None					

Expected Pilot Response(s)

- If not in visual contact with the runway, execute a missed approach.
- Hand fly lateral path during missed approach to within RNP limits (including RF leg) until automation can be re-engaged.

How does pilot know condition is resolved/recovered?

- Flight path is recovered to within limits

Issues with regard to multiple concurrent non-normal conditions

- Aircraft making a missed approach in response to this condition may complicate NextGen automated sequencing/metering or traffic separation.